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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/063,300 | 04/09/2002 | Nigel Frederick Clay | 200-1759 RLC | 6893 |

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| EXAMINER |
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TRAN, LEN

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| ART UNIT | PAPER NUMBER |
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1725

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/063,300

Applicant(s)

CLAY ET AL.

Examiner

Len Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-18 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-18, drawn to a method, classified in class 228, subclass 223.
- II. Claims 19-20, drawn to an article, classified in class 420, subclass 560.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the method can be performed with a different solder composition.

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Matthew Jakubowski on February 11, 2003, a provisional election was made *with* traverse to prosecute the invention of group I, claims 1-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19 and 20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

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application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

6. Claims 1 and 11 are objected to because of the following informalities:

As to claim 1, the term "past-like" is incorrect. It should have been written as – paste-like--. If this is a correction interpretation, clarification/correction is required.

As to claims 1 and 11, the term "100 E C" is vague, since the term "E C" is not a conventional term. It should have been written as 100 degrees C.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 4, 8-11, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Stokes, Jr. et al (US 3,858,319).

Stokes, Jr. et al disclose the method of applying solder filler to an aluminum body parts comprising the method of applying the fluxing agent, heating the fluxing agent to deoxidize the surface, applying a zinc based solder filler, heating at least 100 degrees C lower than the melting

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temperature of an aluminum body, and bonding the solder to the aluminum part. The solder comprises a weight of 78 to 98% Zn and 2 to 22% Al (col. 2, lines 37-41). Fluxing agent is comprised of organic compounds and metallic salts.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 2, 12, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes, Jr. et al (US '319) as applied to claims 1 and 11 above in paragraph 8, and further in view of Harvey et al (US 4,358,884).

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Stokes, Jr. et al disclose the claimed invention above, but fail to mention having a solder filler comprised of 73 to 85% Sn, 3 to 5% Zn, 12 to 22 % Cu, the flux/filler ratio of 10% fluxing agent to 90% tin-based, and the flux/filler ratio of 50% flux to 50% zinc-based.

However, Stokes, Jr. et al explicitly disclose the flux to filler ratio. Therefore, finding the optimum combination of flux to filler ratio would have been obvious to one of ordinary skill in the art, since it has been held that discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

In addition, Harvey et al teaches using a solder filler comprising of 14 to 20% of copper, 1 to 7.5 % zinc, and the balance being tin for the purpose of forming a dense, tightly adherent filled.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide 14 to 20% of copper, 1 to 7.5 % zinc, and the balance being tin as taught by Harvey et al, in Stokes, Jr. et al in order to form a dense and tightly fill.

12. Claims 3, 5, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes, Jr. et al (US '319) as applied to claims 1 and 11 above in paragraph 8, and further in view of Gustave et al (US 1,437,641).

Stokes, Jr. et al disclose the claimed invention above, but fail to teach 55-85% tin, 12-40% zinc, and 3-5% Cu.

However, Gustave et al disclose a solder composition comprised of 72 to 87% tin, 10-25% zinc, and 0.5 to 2.5% copper for the purpose of durability.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a solder composition comprised of 72 to 87% tin, 10-25% zinc, and 0.5 to 2.5% copper as taught by Gustave et al, in Stokes, Jr. et al since the above solder composition is durable.

Allowable Subject Matter

13. Claims 6 and 7 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior arts of record fail to teach solder filler consists of 66.5% Sn, 30% Zn, and 3.5% Ni. Also prior arts of record fail to teach solder filler consists of 80% Zn and 20% Al.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Len Tran whose telephone number is (703)605-1175. The examiner can normally be reached on M-F, 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3602 for regular communications and (703)305-3602 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Len Tran
Examiner
Art Unit 1725

LT
February 21, 2003



M. ALEXANDRA ELVE
PRIMARY EXAMINER